2013-2014 Influenza Season: Updates and Recommendations for Clinicians

Clinician Outreach and Communication Activity (COCA) Conference Call

January 23, 2014

Office of Public Health Preparedness and Response
Division of Emergency Operations

Objectives

At the conclusion of this session, the participant will be able to accomplish the following:

- **Describe recent experiences of clinicians caring for patients with severe influenza**
- **Understand the 2013-2014 influenza season**
- **Discuss CDC's recommendations for the treatment of influenza**

TODAY'S PRESENTER

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Centers for Disease Control and Prevention

Clinician Panel

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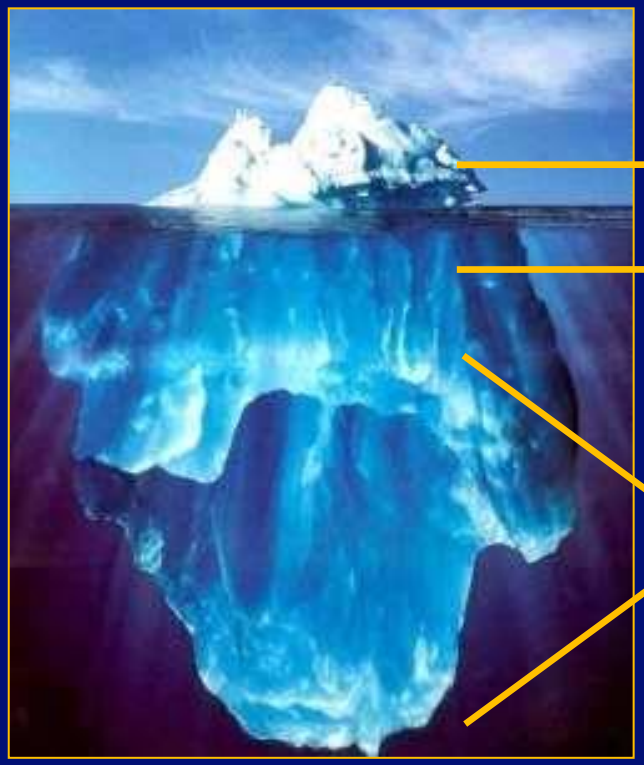
2013-2014 Influenza From the Front Lines…

Contra Costa Regional Medical Center

University of Michigan Health System

Influenza in the United States

Estimated Annual Burden of Seasonal Influenza



Deaths: 3,000 – 49,000

Hospitalizations: 54,000 – 430,000

Cases: 15 – 60 million

Direct Medical Costs: $10.4 billion

Outline

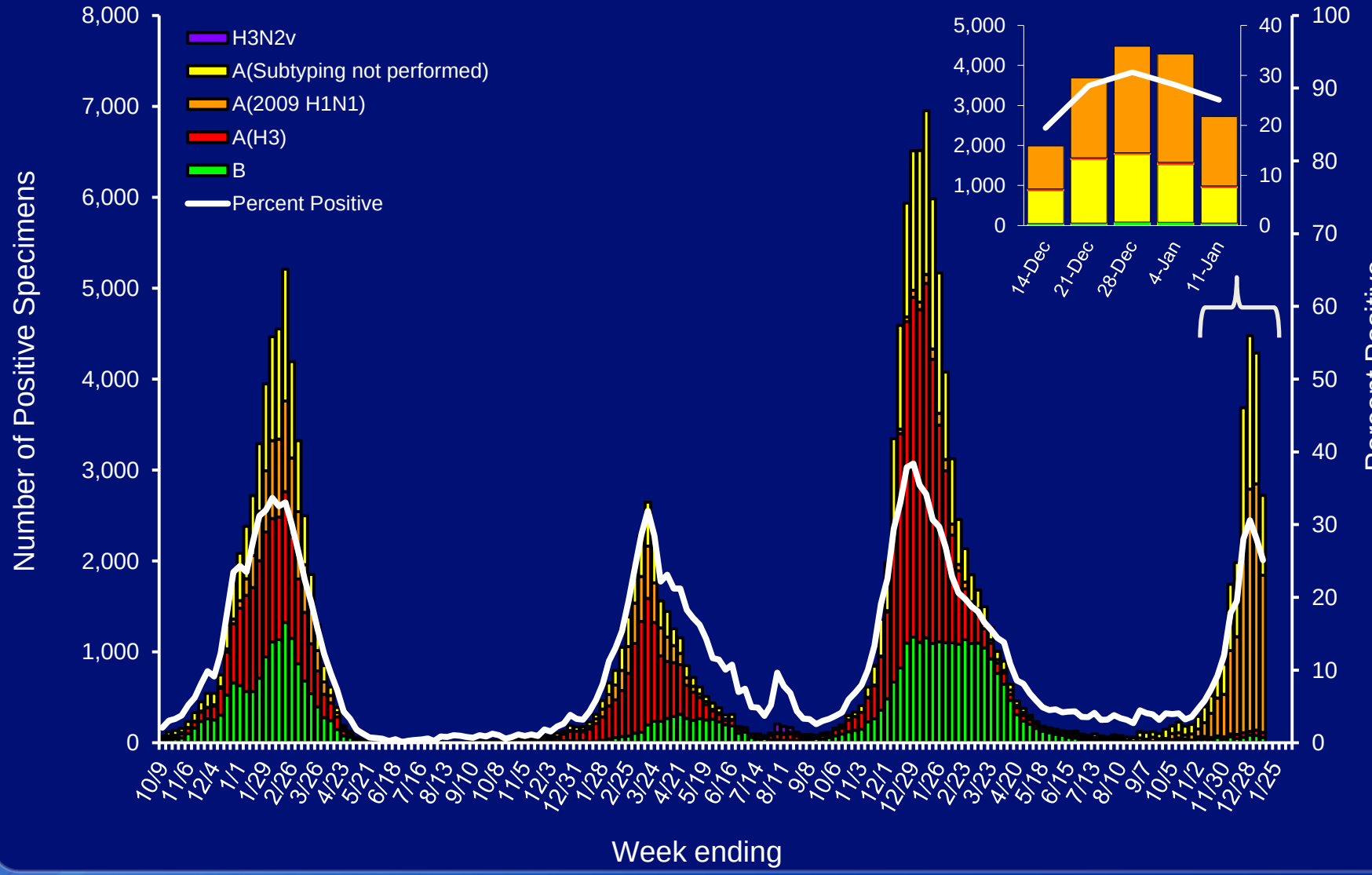
- CDC national surveillance
- Influenza and specific groups
- Influenza vaccination
- Antiviral medications

NATIONAL SURVEILLANCE

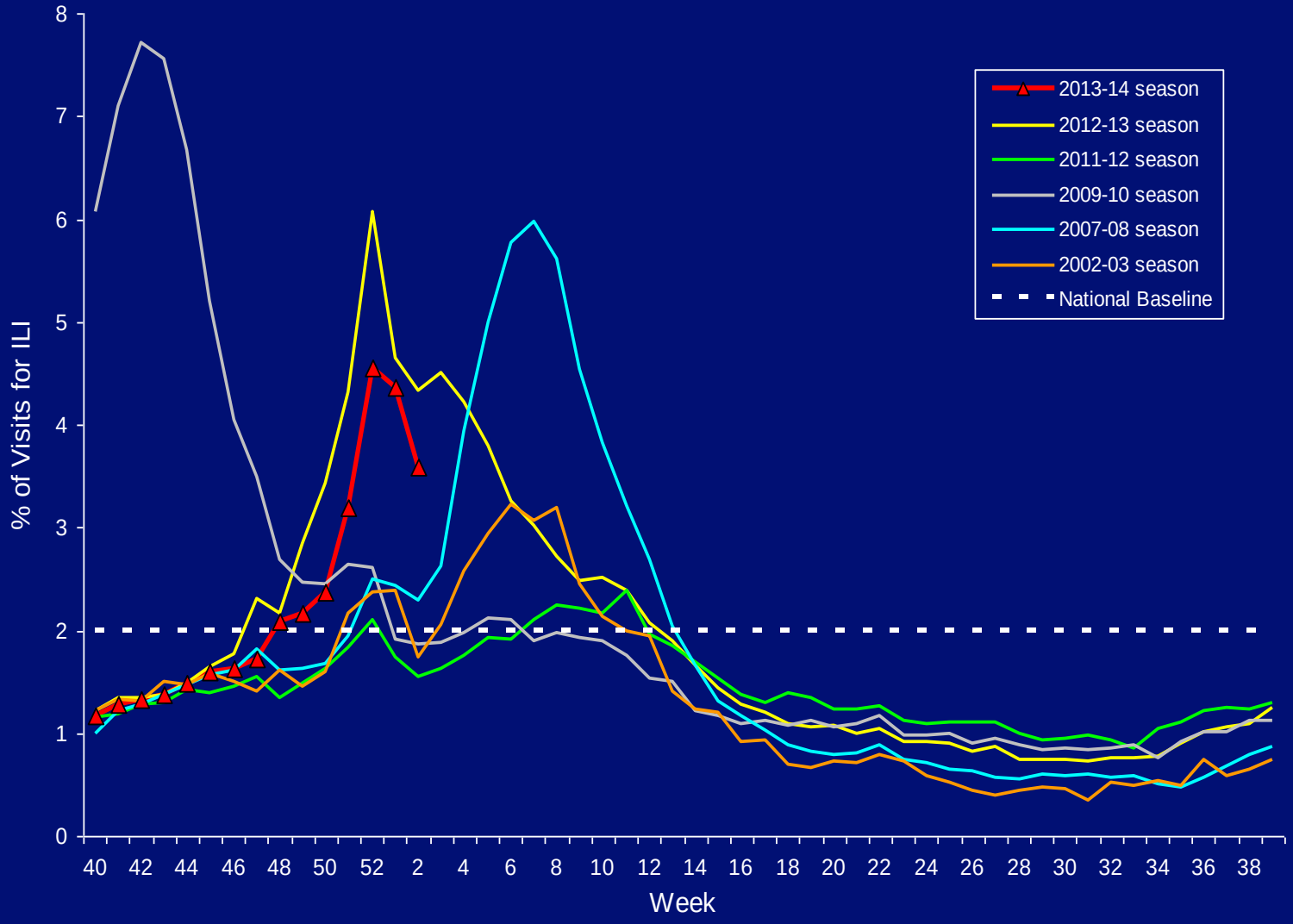
U.S. Virologic Surveillance

	Week 2 (Ending 1/11/2014)
No. of specimens tested	10,841
No. of positive specimens (%)	2,721 (25%)
Positive specimens by type/subtype	
Influenza A	2,662 (98%)
2009 H1N1	1,730 (65%)
H3	55 (2%)
Subtyping not performed	877 (33%)
Influenza B	59 (2%)

U.S. WHO/NREVSS Collaborating Laboratories, National Summary, 2010-2014

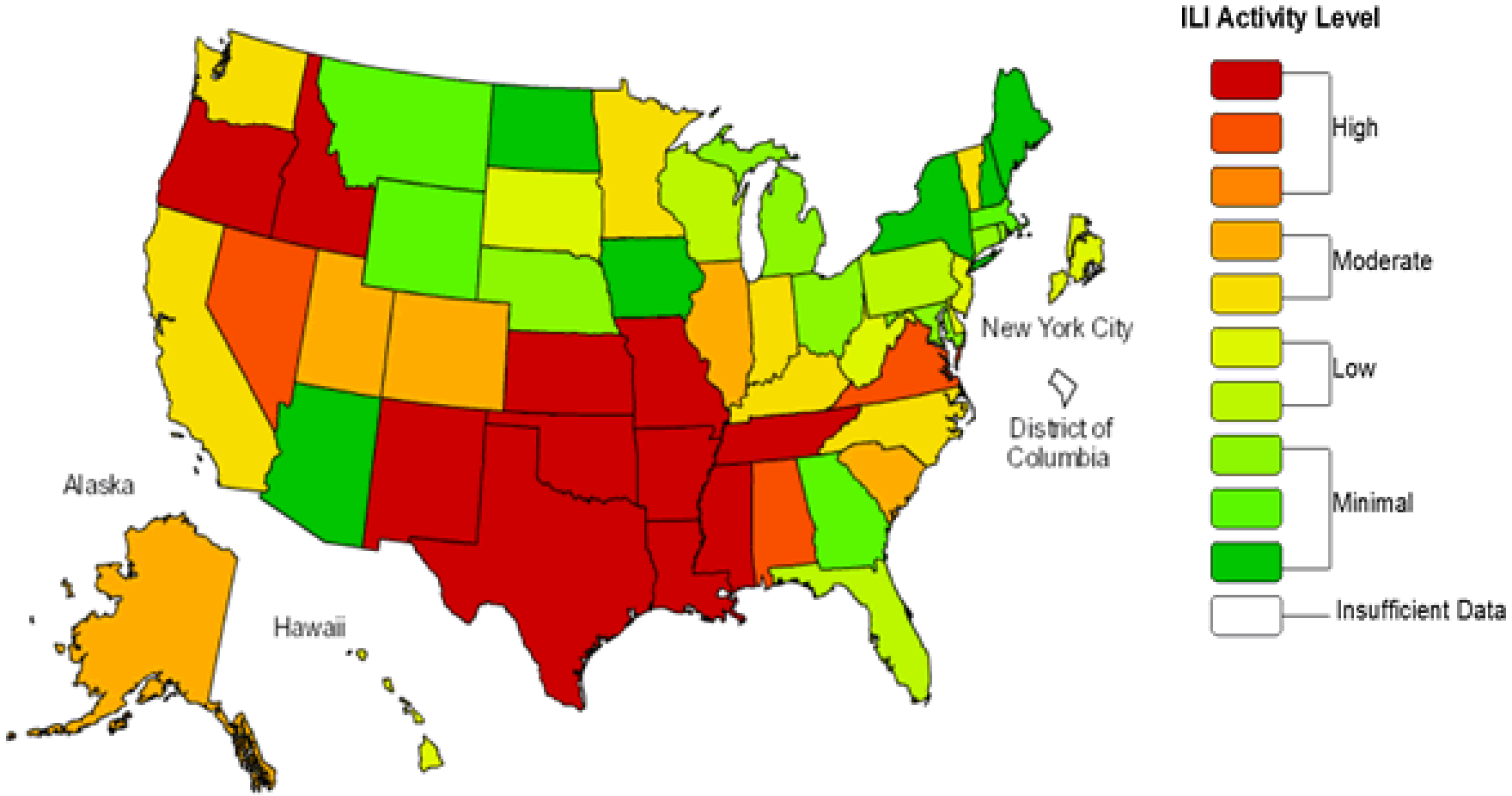


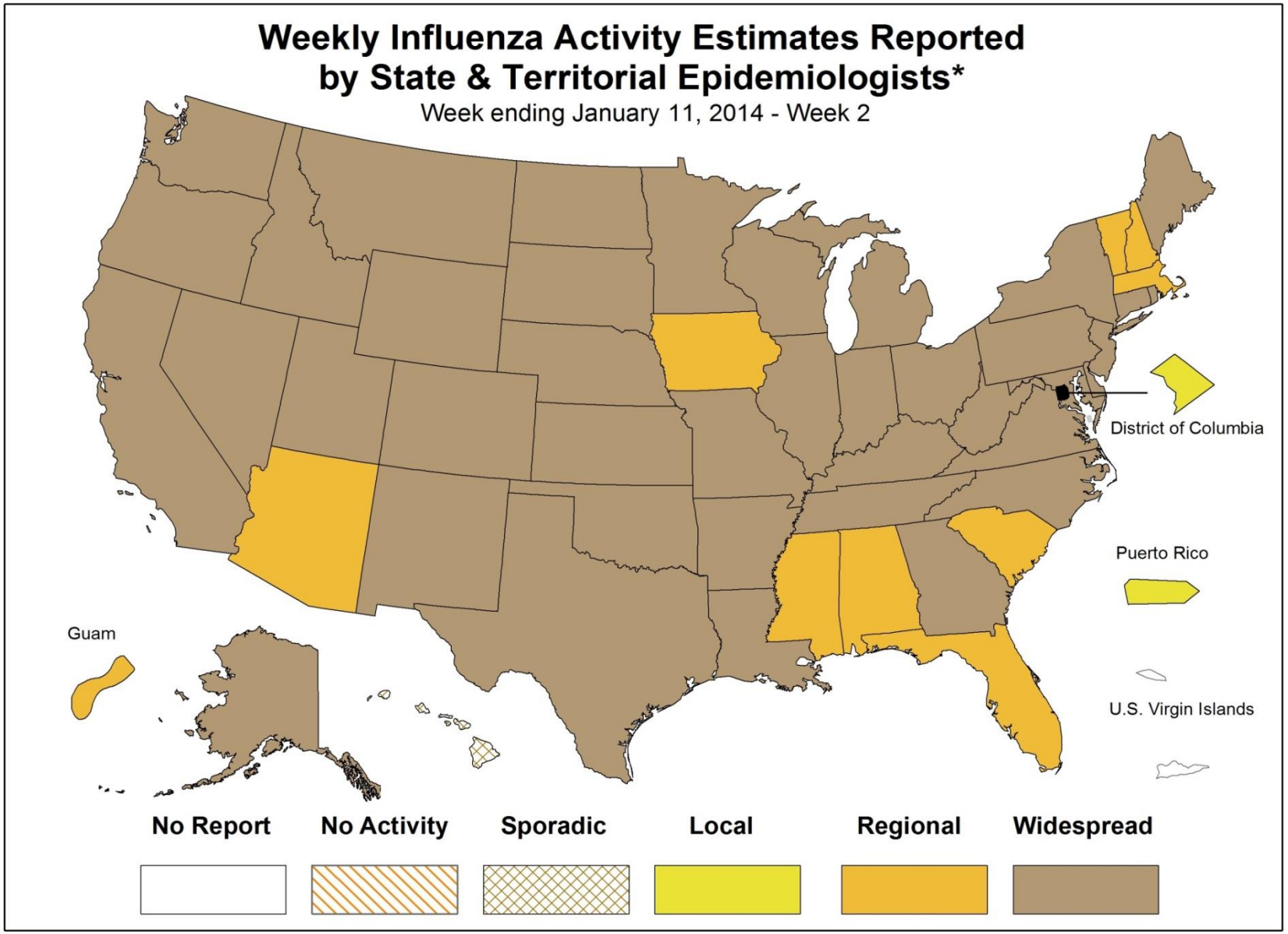
Percentage of Visits for Influenza-like Illness (ILI) Reported by the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet), 2013-2014 and Selected Previous Seasons



Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet

2013-14 Influenza Season Week 2 ending Jan 11, 2014

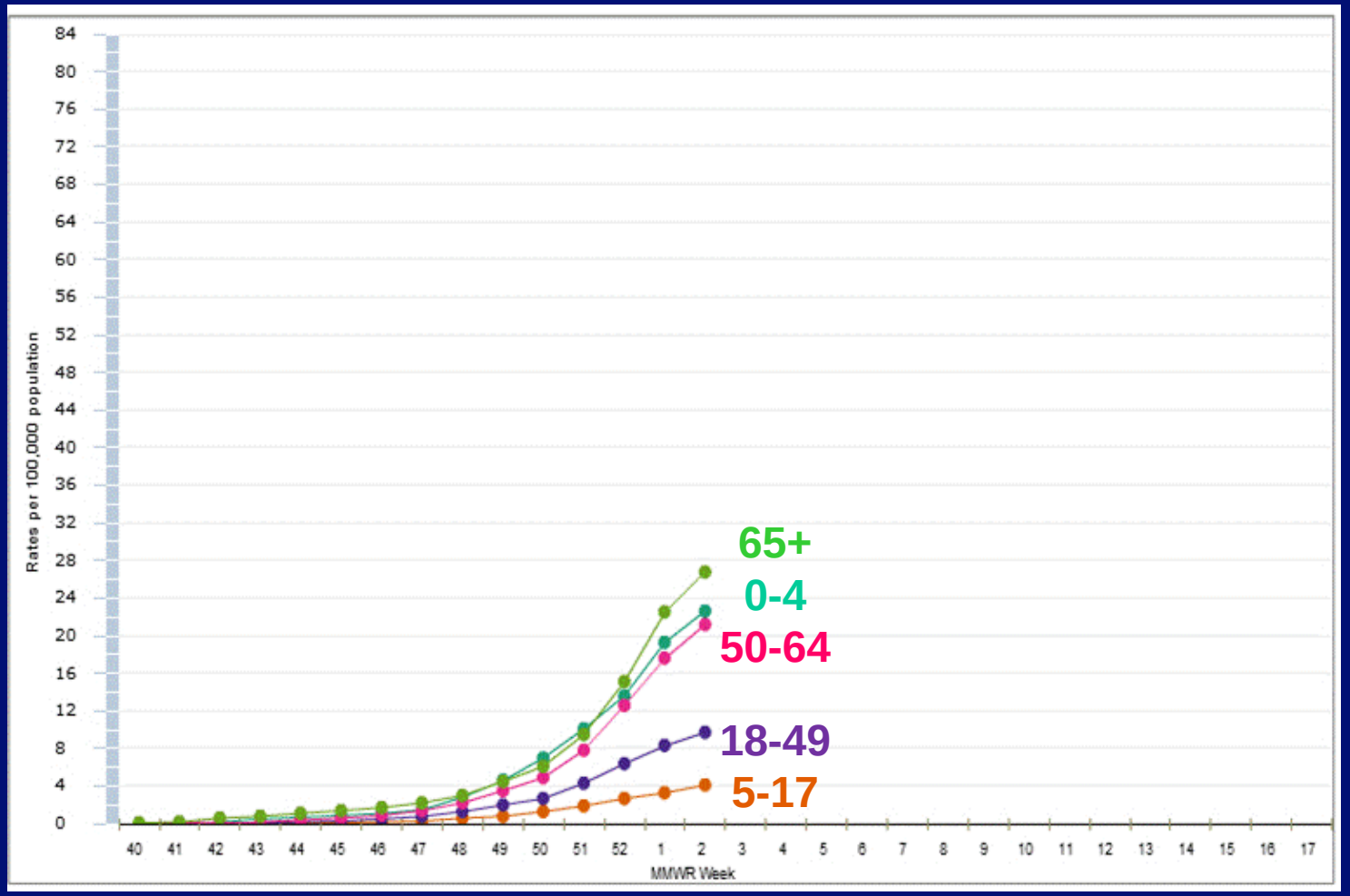




* This map indicates geographic spread & does not measure the severity of influenza activity

Laboratory-Confirmed Influenza Hospitalizations

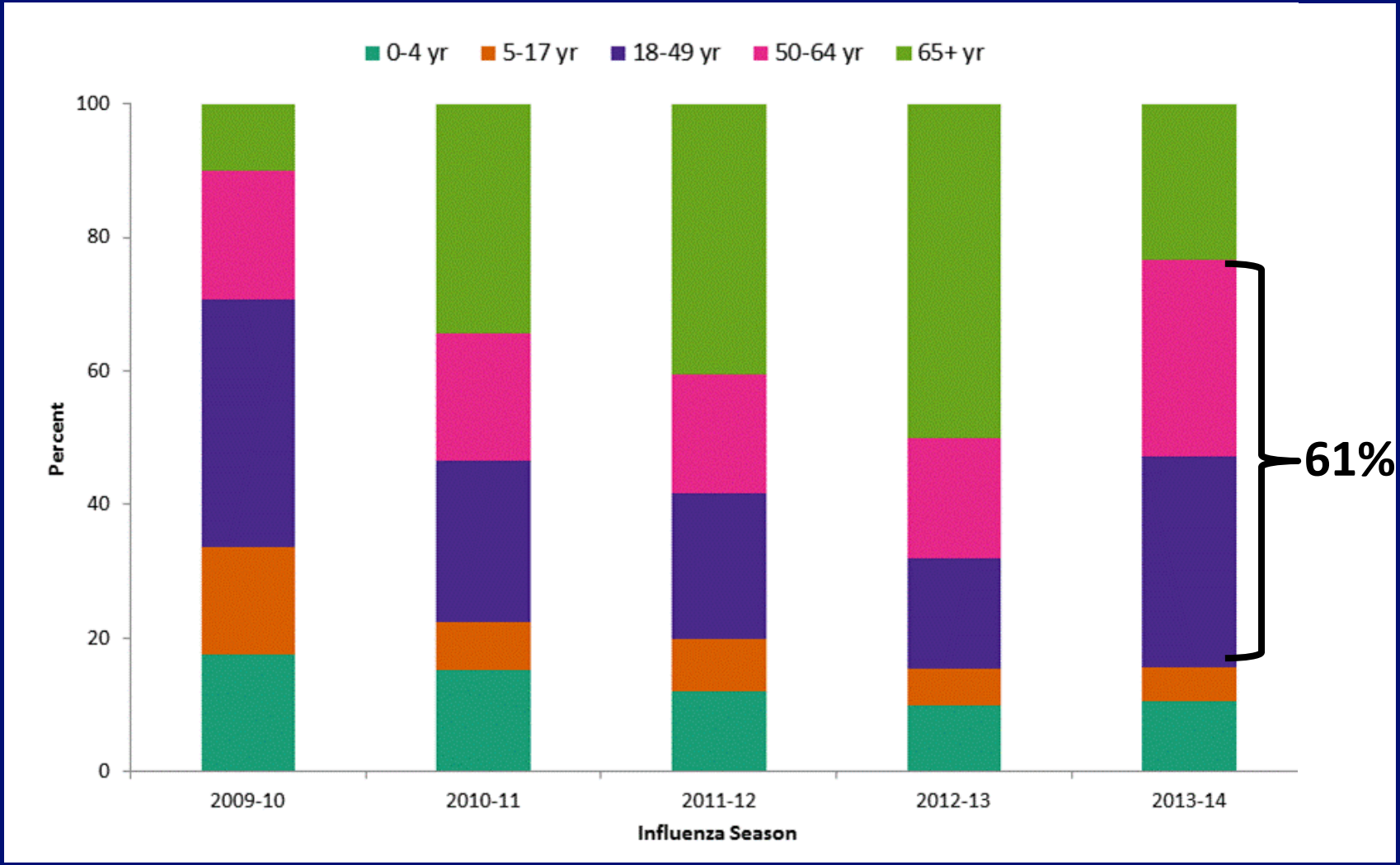
Preliminary rates as of Jan 11, 2014



Data from the Influenza Hospitalization Surveillance Network (FluSurv-NET), a population-based surveillance for influenza related hospitalizations in children and adults in 13 US states. Incidence rates are calculated using the National Center for Health Statistics' (NCHS) population estimates for the counties included in the surveillance catchment area.

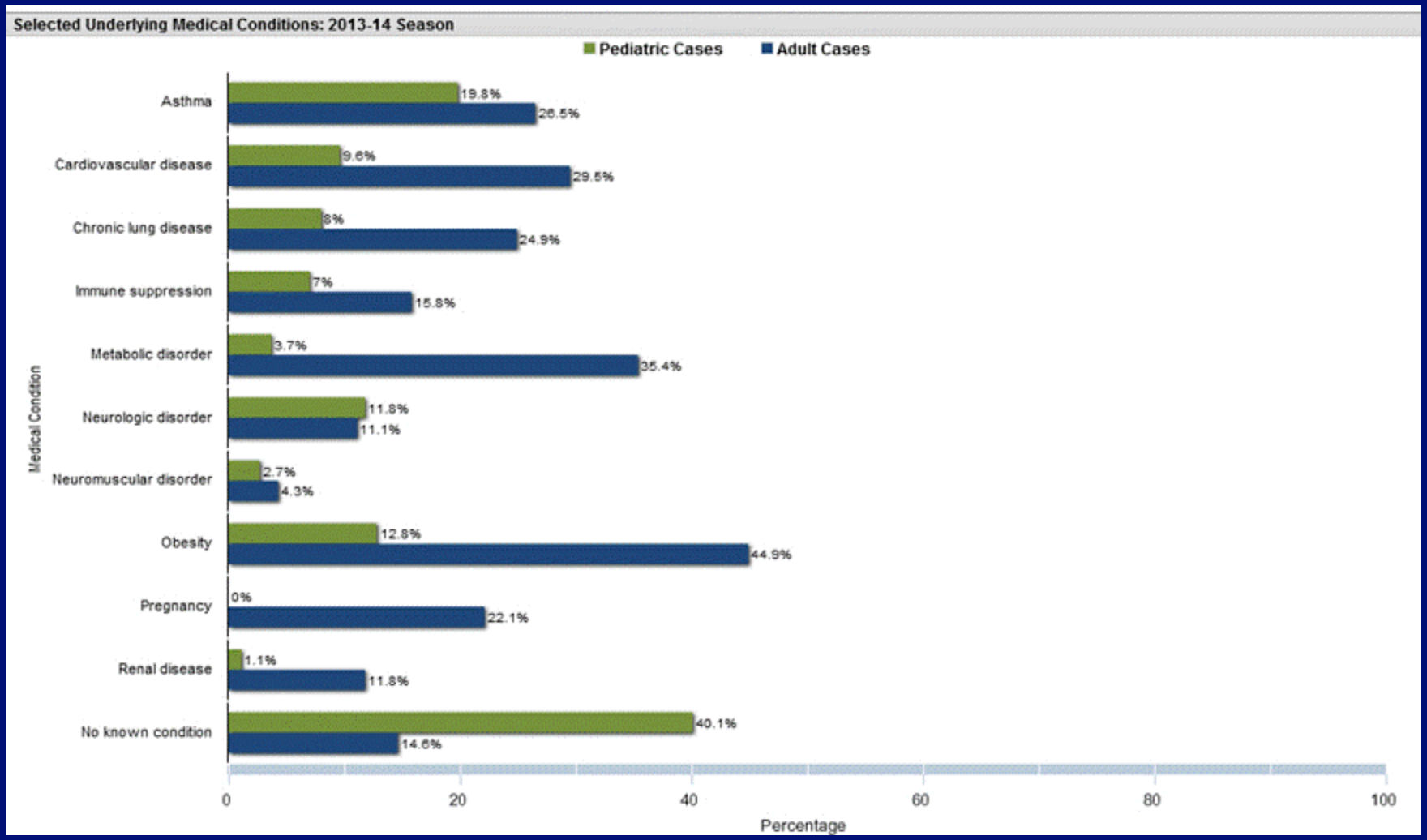
Laboratory-Confirmed Influenza Hospitalizations by Age Group

Preliminary rates as of Jan 11, 2014



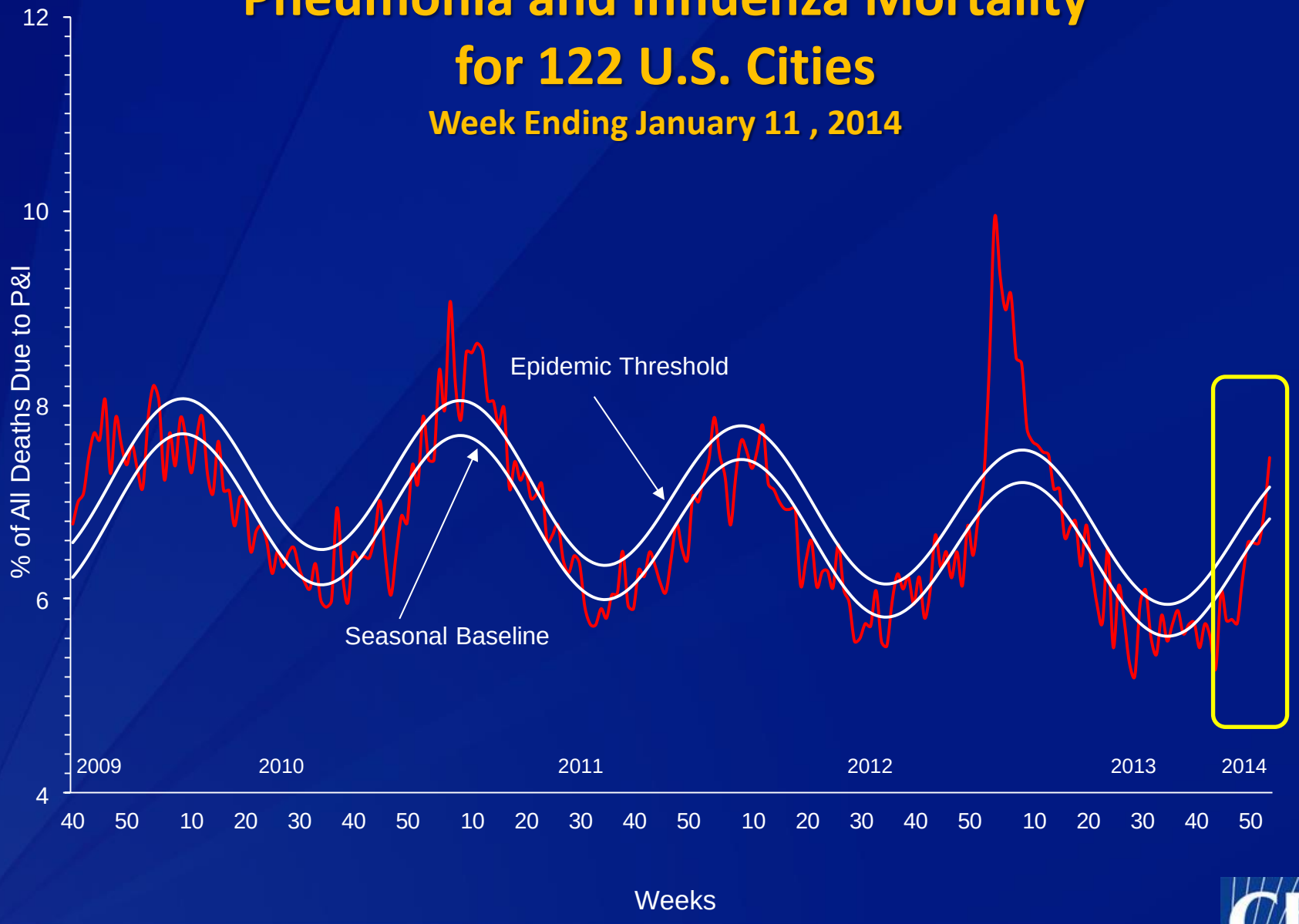
Laboratory-Confirmed Influenza Hospitalizations, Underlying Conditions

Preliminary rates as of Jan 11, 2014



Pneumonia and Influenza Mortality for 122 U.S. Cities

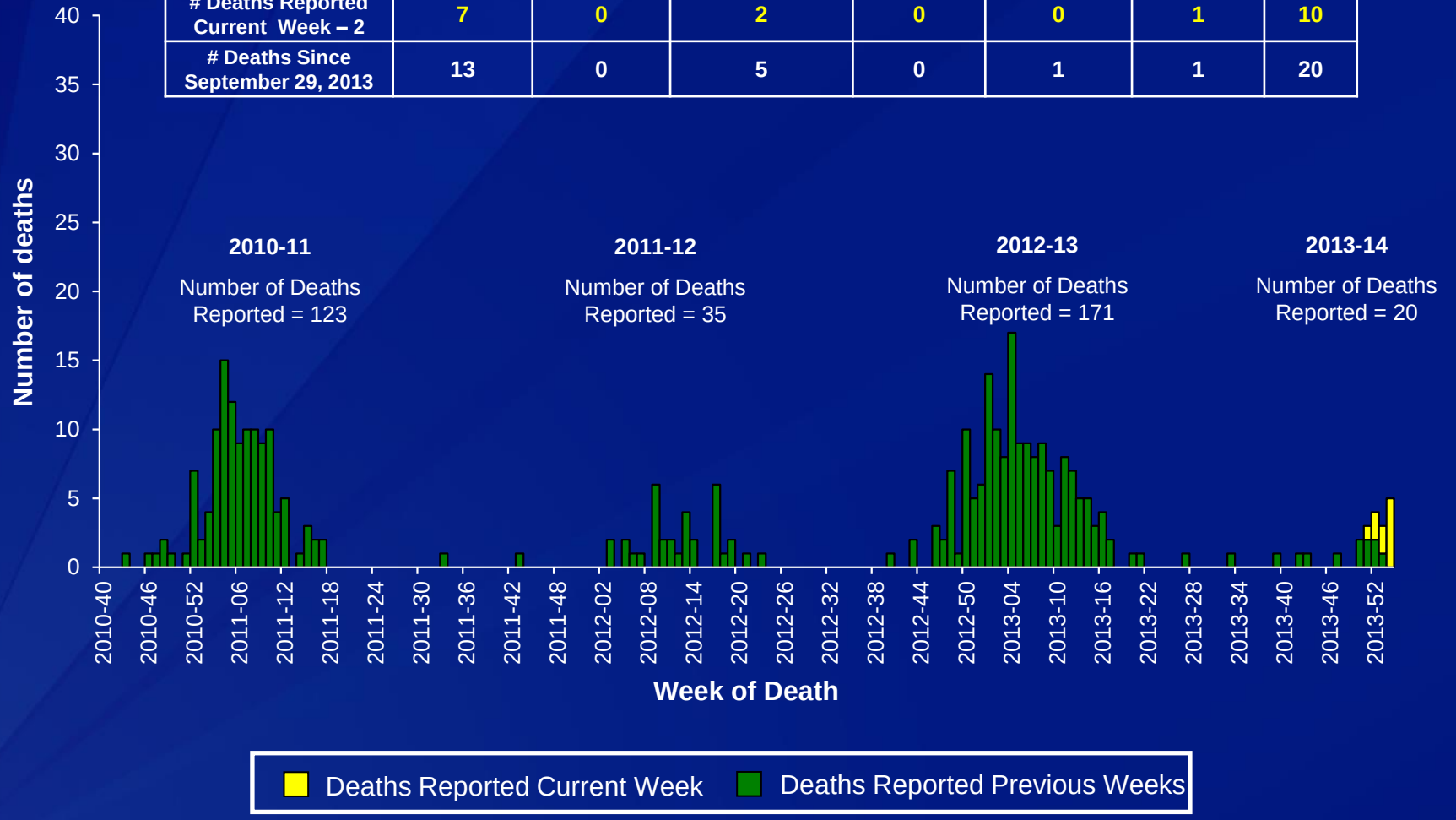
Week Ending January 11 , 2014



CDC

Number of Influenza-Associated Pediatric Deaths by Week of Death: 2010-2011 Season to Present

Date	Influenza A (2009 H1N1)	Influenza A (H3N2)	Influenza A (Subtype Unknown)	Influenza B	Influenza A and B Co-infection	Type not determined	Total
# Deaths Reported Current Week – 2	7	0	2	0	0	1	10
# Deaths Since September 29, 2013	13	0	5	0	1	1	20



Season Overview

- Influenza activity remains high nationwide
- 2009 H1N1 viruses are predominating for the 1st time since the pandemic
- Severity indicators reflecting hospitalizations and deaths are increasing
- Most (61%) hospitalizations are occurring in people 18 to 64 years old
- CDC has received several reports of severe illness in young and middle-aged adults, including pregnant women and people who are obese

HEALTH ALERT NETWORK

(/HAN) This is an official
CDC HEALTH ADVISORY

Distributed via the CDC Health Alert Network
December 24, 2013, 14:30 ET (2:30 PM ET)
CDCHAN-00359

Notice to Clinicians: Early Reports of pH1N1-Associated Illnesses for the 2013-14 Influenza Season

Summary

From November through December 2013, CDC has received a number of reports of severe respiratory illness among young and middle-aged adults, many of whom were infected with influenza A (H1N1) pdm09 (pH1N1) virus. Multiple pH1N1-associated hospitalizations, including many requiring intensive care unit (ICU) admission, and some fatalities have been reported. The pH1N1 virus that emerged in 2009 caused more illness in children and young adults, compared to older adults, although severe illness was seen in all age groups. While it is not possible to predict which influenza viruses will predominate during the entire 2013-14 influenza season, pH1N1 has been the predominant circulating virus so far. **For the 2013-14 season, if pH1N1 virus continues to circulate widely, illness that disproportionately affects young and middle-aged adults may occur.**

http://emergency.cdc.gov/HAN/han00359.asp

INFLUENZA AND SPECIFIC GROUPS

Persons at High Risk for Influenza Complications

- Children <5 years, but especially children <2 years
- Adults ≥65 years
- Pregnant and postpartum women (up to 2 weeks after delivery)
- American Indians and Alaska Natives
- Residents of long-term care facilities
- Persons who are morbidly obese (BMI ≥40)

Persons at High Risk for Influenza Complications (continued)

- Persons with immunosuppression, including that caused by medications or by HIV infection
- Persons aged younger than 19 years who are receiving long-term aspirin therapy
- Persons with chronic pulmonary, cardiovascular (except hypertension alone), renal, hepatic, hematological, metabolic disorders (incl. diabetes), or neurologic and neurodevelopment conditions (incl. disorders of the brain, spinal cord, peripheral nerve, and muscle such as cerebral palsy, epilepsy [sz. disorders], stroke, intellectual disability, mod. to severe developmental delay, muscular dystrophy, or spinal cord injury)

Persons at High Risk for Influenza Complications

- More than 30% of adults aged 50–64 have one or more chronic medical conditions that put them at increased risk

Children with Special Needs

- In the 2009 H1N1 pandemic, >40% of children reported to have died from flu-related causes had an underlying neurologic condition -- the most common being intellectual disability and epilepsy
- During the 2011-2012 influenza season, only 50% of parents of children with special needs intended to vaccinate their child or had their child vaccinated

Pregnant Women

- Pregnant women up to 2 weeks post-partum are at increased risk of severe flu-related complications
- Influenza infection in pregnant woman is associated with an increased chance for miscarriage or preterm birth
- One study during the 2009 H1N1 pandemic showed that pregnant women were 4 times more likely than the general population to be hospitalized
- At this time, 22% of reported flu hospitalizations among women of childbearing age have occurred in pregnant women

American Indians and Alaska Natives

- During the 2009 H1N1 pandemic, hospitalization rates among minority groups were double those of White, non-Hispanics
- American Indians/Alaska Natives had the highest hospitalization rates
- American Indians/Alaska Natives were 4 times more likely to die from 2009 H1N1 than people in other racial/ethnic groups

People Who are Morbidly Obese

- Studies conducted during the 2009 pandemic provided data that obesity, and in particular, morbid obesity, were associated with increased hospitalizations and deaths
- As a result, ACIP added morbid obesity to the list of risk factors associated with severe influenza-related complications

- So far this season, 45% of adults and 13% of children hospitalized with influenza have been obese

INFLUENZA VACCINATION

Influenza Vaccination Recommendations

- Advisory Committee on Immunization Practices (ACIP) recommends annual vaccination for all persons 6 months of age and older (since the 2010-2011 season)

- And yet… national early season vaccination coverage (Nov 2013)
  - Adults 18–49 yr: 31%
  - Adults 50–64 yr: 39%
  - Adults 65+ yr: 62%
  - Pregnant women: 41%
  - Children 6 mo–17 yr: 41%

Vaccines Available for 2013-2014

- **Since early 2012, 6 new vaccines have been approved by the FDA**
  - Three quadrivalent inactivated, one quadrivalent live-attenuated, a cell-culture-based trivalent inactivated, and a trivalent recombinant hemagglutinin vaccine
- **Other vaccines available**
  - Standard dose IIVs (multiple brands)
    - For ≥6 mos., ***BUT*** age indications differ by brand
  - High dose IIV (Fluzone® High Dose)—65 yrs. and over
  - Intradermal IIV (Fluzone® Intradermal)—18 through 64 yrs.
- **No preferential product recommendations**
- **Egg allergic persons should be vaccinated**

Influenza Vaccine Virus Strains for 2013-2014

Trivalent

- A/California/7/2009 (H1N1)-like virus
- H3N2 virus antigenically like the cell-propagated prototype virus A/Victoria/361/2011
- B/Massachusetts/2/2012-like virus (Yamagata lineage)

Quadrivalent

- Adds B/Brisbane/60/2008-like virus (Victoria lineage)

ANTIVIRAL MEDICATIONS

Influenza Antiviral Medications

Clinical trials and observational data show that early antiviral treatment may:

- Shorten the duration of fever and illness symptoms
- Reduce the risk for complications (such as otitis media, pneumonia, respiratory failure) and death
- Shorten the duration of hospitalization

Antiviral Treatment Recommendations

- **Antiviral treatment is recommended as early as possible for any patient with confirmed or suspected influenza who is:**
  - Hospitalized
  - Has severe or progressive illness
  - At high risk for influenza complications

Antiviral Treatment: Early is Best

- **Clinical benefit is greatest when antiviral treatment is administered early**
  - As soon possible after illness onset, ideally within 48 hrs
  - Antiviral treatment might still be beneficial in patients with severe or progressive illness and in hospitalized patients when started later than 48 hrs after illness onset
  - Some studies suggest benefit if initiated up to 4 or 5 days after illness onset
  - However, delay in treatment initiation may result in reduced effectiveness

Antiviral Treatment Recommendations

- Antiviral treatment can be considered for any previously healthy, symptomatic outpatient not at high risk with confirmed or suspected influenza on the basis of clinical judgment, especially if treatment can be initiated early

Role of Laboratory Diagnosis

- Decisions about starting antiviral treatment should not wait for test results or laboratory confirmation of influenza
- Rapid influenza diagnostic tests (RIDTs) have low sensitivities, generally 40-70% (range 10-80%), and high specificities of 90-95% (range 85-100%)
- A negative RIDT result does NOT exclude a diagnosis of influenza and should not be used to make treatment or infection control decisions
- When there is clinical suspicion of influenza and antiviral treatment is indicated, antiviral treatment (and appropriate infection control strategies) should be started as soon as possible

Antiviral Medications

- **Neuraminidase inhibitors: oral oseltamivir (Tamiflu) and inhaled zanamivir (Relenza)**
  - Prevents release of new viruses from cell surface
  - Used for treatment and prevention of influenza A and B
  - This class of drug ***is recommended*** for use during this season

- **Adamantanes: rimantadine and amantadine**
  - No circulating viruses are susceptible → ***NOT recommended*** for use

Oseltamivir (Tamiflu)

- Available as capsule or suspension
- Approved in the U.S. for treatment or prevention of acute uncomplicated influenza in persons aged ≥14 days (recommended for *all* ages by CDC and AAP)
- Treatment dosage (>1 year and >40 kg): 75 mg BID x 5 days (may be longer if severely ill)
- Prevention dosage: 75 mg once daily (for 7-10 days after exposure)
- Pediatric dosage depends on age and weight
- Dose reduction for people with kidney disease
- Side effects: nausea, vomiting

Zanamivir (Relenza)

- **Orally inhaled powder – administered by mouth via special device (Diskhaler)**
- **Approved in the U.S. for:**
  - Treatment of acute uncomplicated seasonal influenza (aged ≥7 years)
  - Prevention of seasonal influenza (aged ≥5 years)
- **Treatment dosage: two puffs in the morning and two at night for 5 days (5 days)**
- **Prevention dosage: 2 puffs once a day (for 7-10 d)**
- **Side effects: wheezing and breathing problems (contraindicated if underlying airway disease)**

Antiviral Treatment Recommendations

- **For outpatients, treatment with either neuraminidase inhibitor is recommended**
  - Oral oseltamivir is preferentially recommended for pregnant women

- **For hospitalized patients and patients with severe or progressive illness, treatment with oseltamivir is recommended**
  - Inhaled zanamivir is not recommended because of the lack of data in patients with severe influenza disease
  - Limited data suggest that oseltamivir delivered by oral or nasogastric administration is generally well absorbed in critically ill influenza patients, including those in the intensive care unit, on continuous renal replacement therapy, and/or on extracorporeal membrane oxygenation

2013-2014 Surveillance: Antiviral Resistance Testing

	Oseltamivir		Zanamivir	
	Virus Samples tested (n)	Resistant Viruses, number (%)	Virus Samples tested (n)	Resistant Viruses, number (%)
Influenza A (H3N2)	85	0 (0.0)	85	0 (0.0)
Influenza B	20	0 (0.0)	20	0 (0.0)
2009 H1N1	1,553*	13 (0.8)	709	0 (0.0)

Investigational Intravenous Medications

- Intravenous (IV) formulations have been developed for three neuraminidase inhibitor medications (oseltamivir, peramivir, zanamivir)
- However, IV peramivir and IV oseltamivir are currently not available via clinical trial, compassionate use, or Emergency Use Authorization
- IV zanamivir is available only by enrollment in an ongoing clinical trial, or under an emergency investigational new drug (EIND) request to the manufacturer for use in hospitalized adult and pediatric patients with severe influenza

Investigational IV Zanamivir: Recommendations for Use

- The efficacy and safety of IV zanamivir for treatment of patients hospitalized with severe influenza have not been established, but are currently being evaluated in clinical trials
- In view of the limited alternatives, CDC recommends that use of IV zanamivir may be considered for severely ill patients with oseltamivir-resistant 2009 H1N1 virus infection
- For patients who cannot tolerate or absorb oral oseltamivir because of suspected or known gastric stasis, malabsorption, or gastrointestinal bleeding, the use of IV zanamivir may be considered
- A request to determine a patient's eligibility for an ongoing clinical trial, or use of IV zanamivir under EIND, may be made by contacting the GSK Clinical Support Help Desk via email (gskclinicalsupportHD@gsk.com) or by calling 1-877-626-8019 or 1-866-341-9160

Summary of Antiviral Recommendations

- **Early empiric antiviral treatment is recommended for suspected or confirmed influenza among the following:**
  - Hospitalized patients
  - Patients with severe or progressive illness
  - Patients at higher risk for complications
- **Decisions about starting antiviral treatment should not wait for laboratory confirmation of influenza**
- **Clinical benefit is greatest when antiviral treatment is initiated early**

For Additional Information

- http://www.cdc.gov/flu/weekly/fluactivitysurv.htm
- http://www.cdc.gov/flu/professionals/index.htm
- http://www.cdc.gov/flu/professionals/antivirals/index.htm
- http://www.cdc.gov/flu/professionals/diagnosis/index.htm
- http://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm

CDC Home

Centers for Disease Control and Prevention

CDC 24/7: Saving Lives. Protecting People.™

SEARCH

A-Z Index A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #

Seasonal Influenza (Flu)

Flu activity is widespread in most of the country. High flu activity is likely to continue for several weeks. If you have not gotten your flu vaccine yet this season, you should get one now. And remember that flu antiviral drugs are a second line of defense to treat flu illness. People at high risk of serious flu illness should call a health care provider if they get flu symptoms.

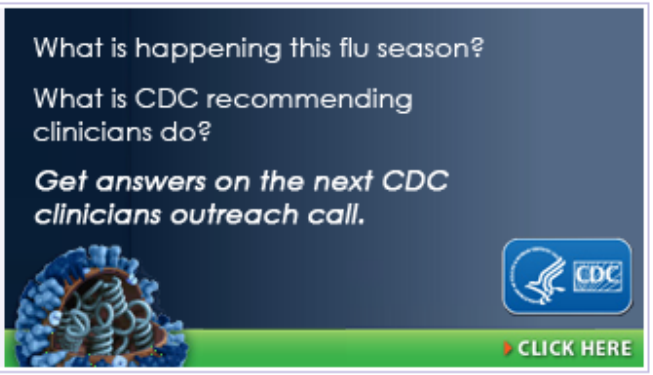
See CDC clinician advisory for this season.

2013-2014 Influenza Season

Updates and Recommendations for Clinicians

Learn More »

1 2 3 4 5



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Flu Basics
Symptoms, How Flu Spreads, Higher Risk Groups, Past and Current Flu Season...

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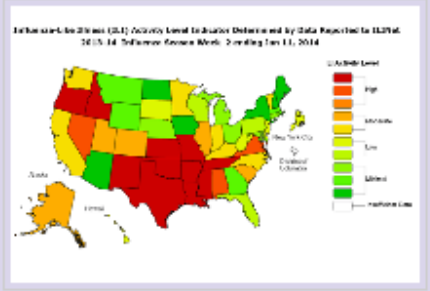
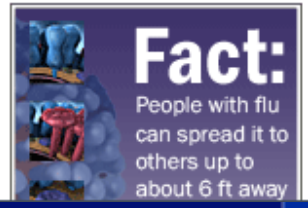
Flu Activity & Surveillance



Check where flu is active near you.
More »

Health Insurance Marketplace

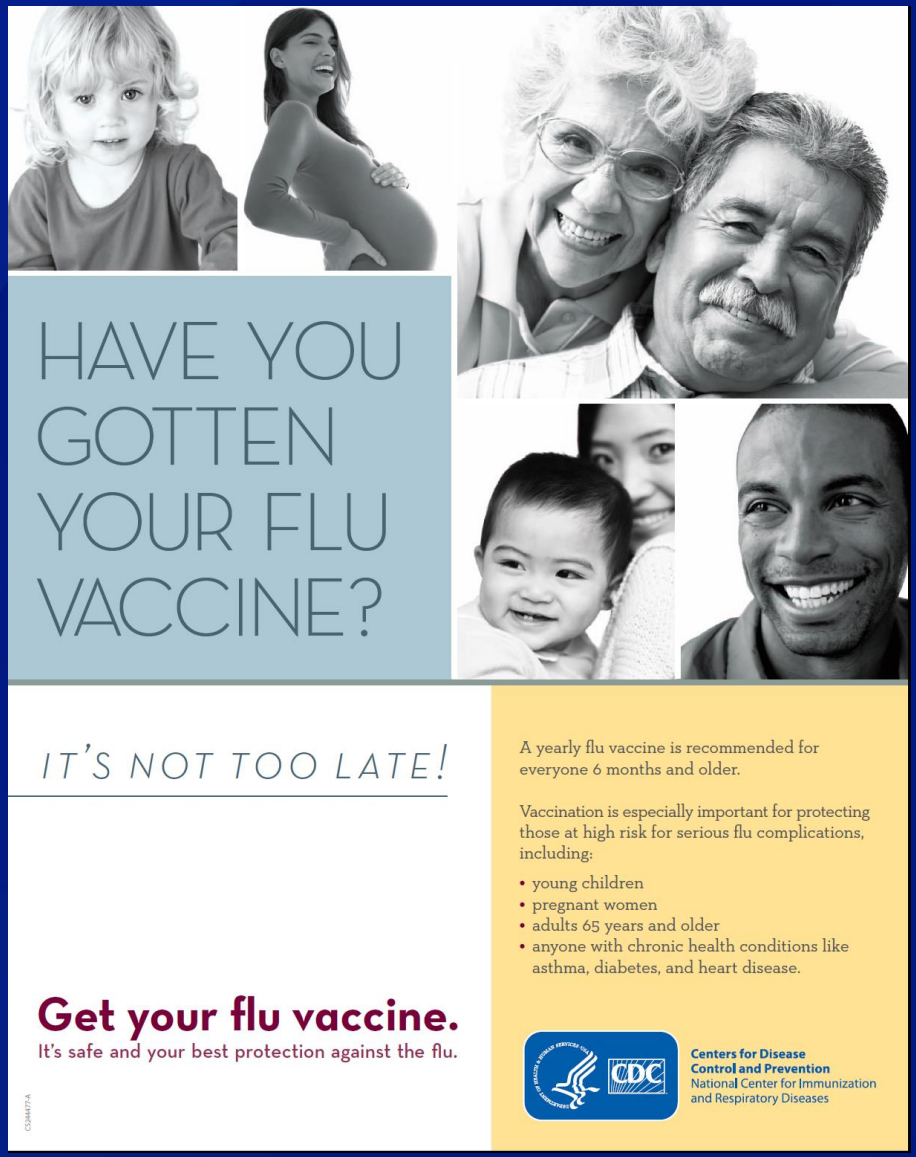
Marketplace plans cover free flu vaccines. ▶



www.cdc.gov/flu

Thank You

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



Centers for Disease Control and Prevention
Atlanta, Georgia

Thank you for joining!
Please email us questions at coca@cdc.gov

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- Specific Hazards
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Emergency Preparedness & Response > Preparedness for All Hazards > Clinician Resources > COCA Conference Cal

2013-2014 Influenza Season: Updates and Recommendations for Clinicians

CE = No Continuing Education

Date: Thursday, January 23, 2014

Time: 2:00 - 3:00 pm (Eastern Time)

Dial-In: 888-233-9077

Passcode: 8207177

Access Webinar: https://www.mymeetings.com/nc/join.php?i=PW3797988&p=8207177&t=c

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http://emergency.cdc.gov/coca

Upcoming COCA Call

January 28, 2014

Malaria Cases in the U.S. Reach 40-Year High: Information and Guidance for Clinicians

CE = Free Continuing Education

Date: Tuesday, January 28, 2014

Time: 2:00 - 3:00 pm (Eastern Time)

To Join:

Dial-In: 888-233-9077

Passcode: 7399953

Access Webinar: https://www.mymeetings.com/nc/join.php?i=PW3575459&p=7399953&t=c

Presenter(s):

Mateusz Plucinski, PHD, MPH
Epidemic Intelligence Service Officer
Center for Global Health
Malaria Branch
Centers for Disease Control and Prevention

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